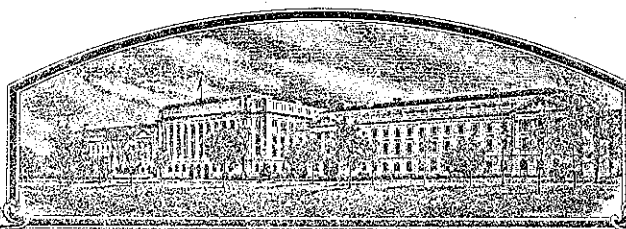


No.

9600051



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

**Pioneer Hi-Bred International, Inc.**

Whereas, THERE HAS BEEN PRESENTED TO THE

**Secretary of Agriculture**

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF EIGHTEEN YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'9132'

*In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this thirty-first day of March in the year of our Lord one thousand nine hundred and ninety-eight.*

*Attest:*

*Thomas C. Salt*

Acting Commissioner  
Plant Variety Protection Office  
Agricultural Marketing Service

Secretary of Agriculture

U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE  
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a).

## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) (as it is to appear on the Certificate)		2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Pioneer Hi-Bred International, Inc.			9132
4. ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)		5. TELEPHONE (include area code)	FOR OFFICIAL USE ONLY PVPO NUMBER 9600051 DATE NOV. 22, 1995 FILING AND EXAMINATION FEE 2450.00 DATE NOV. 22, 1995 CERTIFICATION FEE 300.00 DATE 3/20/1998
700 Capital Square 400 Locust St. Des Moines, IA 50309		515/270-3582	
		6. FAX (include area code)	
		515/253-2288	
7. GENUS AND SPECIES NAME	8. FAMILY NAME (Botanical)		
Glycine Max	Leguminosae		
9. CROP KIND NAME (Common name)			
Soybean			
10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION (corporation, partnership, association, etc.) (Common name)			
Corporation			
11. IF INCORPORATED, GIVE STATE OF INCORPORATION		12. DATE OF INCORPORATION	
Iowa		1926	
13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS			14. TELEPHONE (include area code)
John Grace 7300 NW 62nd Ave. PO Box 1004 Johnston, IA 50131-1004			515/270-3582
Mike Roth (copy) 700 Capital Square 400 Locust St. Des Moines, IA 50309			15. FAX (include area code)
			515/253-2288
16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)			
a. <input checked="" type="checkbox"/> Exhibit A. Origin and Breeding History of the Variety b. <input checked="" type="checkbox"/> Exhibit B. Statement of Distinctness c. <input checked="" type="checkbox"/> Exhibit C. Objective Description of the Variety d. <input checked="" type="checkbox"/> Exhibit D. Additional Description of the Variety e. <input checked="" type="checkbox"/> Exhibit E. Statement of the Basis of the Applicant's Ownership f. <input checked="" type="checkbox"/> Voucher Sample (2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository) g. <input checked="" type="checkbox"/> Filing and Examination Fee (\$2,450), made payable to "Treasurer of the United States" (Mail to PVPO)			
17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act)?			
<input type="checkbox"/> YES (If "yes," answer items 18 and 19 below) <input checked="" type="checkbox"/> NO (If "no," go to item 20)			
18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?		19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?	
<input type="checkbox"/> YES <input type="checkbox"/> NO		<input type="checkbox"/> FOUNDATION <input type="checkbox"/> REGISTERED <input type="checkbox"/> CERTIFIED	
20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES?			
<input type="checkbox"/> YES (If "yes," give names of countries and dates) <input checked="" type="checkbox"/> NO			
21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.			
The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.			
Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT (Owner(s))		SIGNATURE OF APPLICANT (Owner(s))	
NAME (Please print or type)		NAME (Please print or type)	
D. John Grace III			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Soybean Research Coordinator	11/16/95		

Pioneer Hi-Bred Int'l, Inc.  
 PVP Application 9132 Soybean  
 May 2, 1995

## EXHIBIT A

### ORIGIN AND BREEDING HISTORY

#### Breeding History of 9132 Soybean

- 1986 (Summer) A cross was made between 'S15-50' and '9272' at the Pioneer research station in Napoleon, Ohio. The stock number "5988" was assigned to identify the population created by this cross.
- 1986-87 Population 5988 was advanced through the F4 generation using modified single seed descent.
- 1988 F5 generation of population 5988 was grown in Redwood Falls, Minnesota. Single plants were selected from this population and individually threshed.
- 1989 F5;F6 progeny rows were grown out from plants harvested in 1989. Row RFPR89-11816 was selected, harvested, and designated 5858R028.
- 1990 Line 5858R028 was entered into preliminary yield trials in Minnesota ( test: RFD10100)
- 1991 Entered an advanced yield trial in Minnesota (test: RFA1B100). Plants were pulled from a rouged bulk for purification purposes.
- 1992 Entered into elite yield trials across the Group I growing regions of the United States and Canada (Tests: RFA1E000, NPA1E000). Ninety-eight purification rows derived from plants pulled in 1991 were harvested and bulked to form the first breeder seed lot. Rows containing offtypes were rouged or discarded
- 1993 Second year of elite yield testing across the United States and Canada (Tests: RFA1E000, NPA1E000, NPVL2800). A 5.5 acre production block (breeder seed) was grown in Redwood Falls, Minnesota.
- 1994 Third year of elite yield testing across the United States and Canada (Tests: RFA1E000, RFVXB13D, NPA1E000, NPVL2800 ). A 76 acre production block (foundation seed ) was grown in Waterloo, Iowa
- 1995 Based on superior yield for maturity, multi-race Phytophthora resistance, and strong brown stem rot resistance, the line was released as '9132'.

'9132' has undergone five years of extensive testing and purification. It has been observed by the breeder to be uniform and stable for all plant traits from generation to generation, with no evidence of variants.

Five and one half acres of 9132 (breeder's seed) were grown in 1993. Seventy-six acres of 9132 (foundation seed equivalent) were grown in 1994.

Pioneer Hi-Bred Int'l, Inc.  
PVP Application 9132 Soybean  
May 2, 1995

EXHIBIT B: NOVELTY STATEMENT CONCERNING <sup>9132 8/8/90 to 1997</sup> ~~9041~~ SOYBEAN

To our knowledge, variety 9132 is most similar to AP2292. Both lines have purple flowers, tawny pubescence, black hila, and possess the Rps1c allele for resistance to Phytophthora races. In our search, no other lines having this trait combination, and a maturity similar to 9132 were found.

Cultivars 9132 and AP2292 exhibit different isozyme patterns (Table 1). 9132 also differs from AP2292 in that AP2292 matures 10 days later than 9132.

Table 1. Isozyme profiles of 9132 and AP2292.

Variety	Isozyme											
	ACO2	ACO3	ACO4	ACP	DIA	ENP	IDH1	IDH2	MDH	MPI	PGM1	PHI1
9132	2	1	1	A	A	A	2	1	B	B	2	1
AP2292	2	1	1	B	B	A	2	1	B	A	1	1

Key:

Aconitase: ACO2, ACO3, ACO4  
Acid Phosphatase: ACP  
Diaphorase: DIA  
Endopeptidase: ENP  
Isocitrate Dehydrogenase: IDH1, IDH2  
Malate Dehydrogenase: MDH  
Mannose 6-Phosphate Isomerase: MPI  
Phosphoglucomutase: PGM  
Phosphoglucose Isomerase: PHI

□

U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE  
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION  
 PLANT VARIETY PROTECTION OFFICE  
 BELTSVILLE, MARYLAND 20705

EXHIBIT  
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY  
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Pioneer Hi-Bred International, Inc.	TEMPORARY DESIGNATION	VARIETY NAME 9132
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 700 Capital Square 400 Locust Street Des Moines, IA 50309		FOR OFFICIAL USE ONLY PVPO NUMBER 9600051

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g.,   ). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)  
 3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)  
 4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow

2 = Green

3 = Brown

4 = Black

5 = Other (Specify) \_\_\_\_\_

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')

2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

1 = Buff

2 = Yellow

3 = Brown

4 = Gray

5 = Imperfect Black

6 = Black

7 = Other (Specify) \_\_\_\_\_

★ 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow

2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low

2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1<sup>a</sup>)

2 = Type B (SP1<sup>b</sup>)

★ 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')

2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')

3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')

4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ 10. LEAFLET SHAPE:

1 = Lanceolate

2 = Oval

3 = Ovate

4 = Other (Specify) \_\_\_\_\_

## 11. LEAFLET SIZE:

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☐ 21 = Small ('Amsoy 71'; 'A5312')  
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

## 12. LEAF COLOR:

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☐ 31 = Light Green ('Weber'; 'York')  
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

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## ★ 13. FLOWER COLOR:

☐ 2

1 = White

2 = Purple

3 = White with purple throat

## ★ 14. POD COLOR:

☐ 2

1 = Tan

2 = Brown

3 = Black

## ★ 15. PLANT PUBESCENCE COLOR:

☐ 2

1 = Gray

2 = Brown (Tawny)

## 16. PLANT TYPES:

☐ 31 = Slender ('Essex'; 'Amsoy 71')  
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

## ★ 17. PLANT HABIT:

☐ 3

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

## ★ 18. MATURITY GROUP:

☐ 0 ☐ 4

1 = 000

2 = 00

3 = 0

4 = I

5 = II

6 = III

7 = IV

8 = V

9 = VI

10 = VII

11 = VIII

12 = IX

13 = X

## ★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

## BACTERIAL DISEASES:

★ ☐ 0 Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)★ ☐ 1 Bacterial Blight (*Pseudomonas glycinea*)★ ☐ 0 Wildfire (*Pseudomonas tabaci*)

## FUNGAL DISEASES:

★ ☐ 1 Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojina*)★ ☐ 0 Race 1 ☐ 0 Race 2 ☐ 0 Race 3 ☐ 0 Race 4 ☐ 0 Race 5 ☐ Other (Specify)☐ 0 Target Spot (*Corynespora cassiicola*)☐ 0 Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ 0 Powdery Mildew (*Microsphaera diffusa*)★ ☐ 2 Brown Stem Rot (*Cephalosporium gregatum*) MR score=7☐ 0 Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

## FUNGAL DISEASES: (Continued)

- ★ ☐ 1 Pod and Stem Blight (*Diaporthe phaseolorum* var; *sojae*)
- ☐ 1 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 1 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☐ 2 Race 1 ☐ 2 Race 2 ☐ 2 Race 3 ☐ 0 Race 4 ☐ 1 Race 5 ☐ 0 Race 6 ☐ 2 Race 7
- ☐ 2 Race 8 ☐ 2 Race 9 ☐ 2 Other (Specify) 10, 13, 17; susceptible to races 12, 16

## VIRAL DISEASES:

- ☐ 1 Bud Blight (Tobacco Ringspot Virus)
- ☐ 1 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ 1 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 1 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☐ 1 Seed Mottle (Soybean Mosaic Virus)

## NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 0 Race 1 ☐ 0 Race 2 ☐ 1 Race 3 ☐ 0 Race 4 ☐ Other (Specify) \_\_\_\_\_
- ☐ 0 Lance Nematode (*Hoplolaimus Colombus*)
- ★ ☐ 0 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ OTHER DISEASE NOT ON FORM (Specify): \_\_\_\_\_

## 20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☐ 1 Iron Chlorosis on Calcareous Soil Moderately susceptible
- ☐ Other (Specify) \_\_\_\_\_

## 21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ Other (Specify) \_\_\_\_\_

## 22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	9141	Seed Coat Luster	9141
Leaf Shape	AP2292	Seed Size	9141
Leaf Color	9202	Seed Shape	9161
Leaf Size	AP2292	Seedling Pigmentation	9181

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

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VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
9132 Submitted	126.3		83	7.4	11.3	41.6	22.0	17.8	3
AP2292 Name of Similar Variety	136.4		80	8.3	12.5	41.9	21.5	18.3	3

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A<sub>2</sub> in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol.: 1-19.

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## 9132 PVP Application

## EXHIBIT D.

In Exhibit C we have identified 9132 as susceptible to bacterial blight, brown spot, pod and stem blight, rhizoctonia root rot, bud blight, yellow mosaic, cowpea mosaic, pod mottle and seed mottle. This does not mean we consider 9132 to be worse than other varieties of similar maturity in reaction to these challenges. Rather, we have chosen to be conservative and have identified 9132 as "susceptible".

Variety 9132 is an early-mid group I variety. If group I maturities are divided into tenths, the relative maturity of 9132 is 1.3.

Pioneer Hi-Bred Int'l, Inc.  
PVP Application 9132 Soybean  
May 2, 1995

**EXHIBIT E: STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP**

Variety '9132' was originated and developed by plant breeders (U.S. nationals) from whom, by agreement, Pioneer Hi-Bred has obtained exclusive rights to protect and market variety '9132'. No rights to such invention, discovery, or development are retained by the plant breeders or by any other party.

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